#### Maintenance Summary for Jan 01, 2008-Dec. 31, 2008

#### **Tower A**

- 03/25/08-Chris&Mike: Dust collector preventive maintenance-
  - Check the condition of the system.
  - Check the structural integrity of the baghouse.
  - o Check the baghouse pulse system.
  - Inspect the filter bags and determine the need for and schedule bag changes.
  - o Check for leaks in access doors.
  - Check for leaks in Air Lines/Fittings.
  - Blow out WC gauge lines.
  - o Change oil in gearbox.
- 03/25/08-Chris: Pulse tube out of position, fixed clamp, angle iron for tubes off on east side. Put new bolts in with nylok nuts. Installed new gasket material on door.
- 04/10/08-Chris: Dust collector preventive maintenance-
  - Check the condition of fan components for high operating temperature of vibration
  - Lubricate parts (e.g., fans, bearings, motors) as necessary
  - Check fans and motor for vibration and noise
  - Check shaft and sheave alignment and repair as necessary
  - Inspect filer bags, tube sheet, door seals, valvles, piping for signs of leaks or dust and repair as necessary-Bags have 1/8" of coating
  - Record pulse duration and delay/check operation of purge valves
- 04/10/08-Mike: Replaced Belts
- 09/08/08-Chris: Dust collector preventive maintenance-
  - Check the condition of the system.
  - Check the structural integrity of the baghouse.
  - Check the baghouse pulse system.
  - Inspect the filter bags and determine the need for and schedule bag changes.
  - Check for leaks in access doors.
  - Check for leaks in Air Lines/Fittings.
  - Blow out WC gauge lines.
  - Change oil in gearbox
- 09/08/08-Chris: Fixed door seal, silicone door seal
- 09/16/08-Mike&Adam: Replace both sprockets and chains; making noise.
- 11/28/08-Serviced by Eagle Environmental.
  - Filter bags changes
  - Die test preformed
  - Bags pre-coated(Hydrated Lime)
  - Greased fan bearings and motors-Atlas
  - Calibrated pressure gauge-Atlas

• Maintenance Summary for Jan 01, 2008-Dec. 31, 2008

• Tower B

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 No maintenance records for 2008 as the baghouse was not in operation until late that year

Maintenance Summary for Jan 01, 2009-Dec. 31, 2009

### **Tower A**

- 04/01/09-Chris: Dust collector preventive maintenance-
  - Check the condition of the system.
  - Check the structural integrity of the baghouse.
  - Check the baghouse pulse system.
  - o Inspect the filter bags and determine the need for and schedule bag changes.
  - Check for leaks in access doors.
  - Check for leaks in Air Lines/Fittings.
  - o Blow out WC gauge lines.
  - Change oil in gearbox.
- 10/03/09-Serviced by Eagle Environmental.
  - Filter bags changes
  - Die test preformed
  - Bags pre-coated(Hydrated Lime)
  - Greased fan bearings and motors-Atlas
  - Calibrated pressure gauge-Atlas
- 11/2009-Johnson Controls: Vibration Analysis Preformed
- 12/17/09-Adam&Perry: Dust collector preventive maintenance-
  - Check the condition of fan components for high operating temperature of vibration
  - o Lubricate parts (e.g., fans, bearings, motors) as necessary
  - Check fans and motor for vibration and noise
  - Check shaft and sheave alignment and repair as necessary
  - Check for visible emissions
  - Check case support for corrosion. Check all bolts and welds
  - Record pulse duration and delay/check operation of purge valves
  - Also put insulation on manifold and plugged in heat tape.

- 04/01/09-Chris: Dust collector preventive maintenance-
  - Check the condition of the system.
  - Check the structural integrity of the baghouse.
  - Check the baghouse pulse system.
  - Inspect the filter bags and determine the need for and schedule bag changes.
  - o Check for leaks in access doors.
  - Check for leaks in Air Lines/Fittings.

- o Blow out WC gauge lines.
- Change oil in gearbox.
- 10/03/09-Serviced by Eagle Environmental.
  - Filter bags changes
  - o Die test preformed
  - Bags pre-coated(Hydrated Lime)
  - o Greased fan bearings and motors-Atlas
  - Calibrated pressure gauge-Atlas
- 11/2009-Johnson Controls: Vibration Analysis Preformed
- 12/17/09-Adam&Perry: Dust collector preventive maintenance-
  - Check the condition of fan components for high operating temperature of vibration
  - o Lubricate parts (e.g., fans, bearings, motors) as necessary
  - o Check fans and motor for vibration and noise
  - Check shaft and sheave alignment and repair as necessary
  - o Check for visible emissions
  - o Check case support for corrosion. Check all bolts and welds
  - Record pulse duration and delay/check operation of purge valves
  - o Also put insulation on manifold and plugged in heat tape.
- 12/28/09-Adam: Dust collector preventive maintenance-
  - Check the condition of fan components for high operating temperatures or vibration
  - Lubricate parts (e.g., fans, bearings, motors) as necessary
  - Change rotary valve gear box oil (SHC 630)

Maintenance Summary for Jan 01, 2010-Dec. 31, 2010

## **Tower A**

- 02/2010-Johnson Controls: Vibration Analysis Preformed
- 05/2010-Johnson Controls: Vibration Analysis Preformed
- 05/31/10-Serviced by Eagle Environmental.
  - Filter bags changes
  - Replaced Cages
  - Die test preformed
  - Bags pre-coated(Hydrated Lime)
  - Greased fan bearings and motors-Atlas
  - o Calibrated pressure gauge-Atlas
- 05/31/10-06/02/10-Atlas: Explosion suppression system installed.
- 06/02/10- BS&B (Industrial Protection Devices): Commissioned the bag house explosion suppression system.
- 06/23/10-Perry&Mike: Installed new tab on explosion panel
- 08/2010-Johnson Controls: Vibration Analysis Preformed
- 10/2010-Johnson Controls: Vibration Analysis Preformed

- 02/2010-Johnson Controls: Vibration Analysis Preformed
- 05/04/10-Vacuum found disconnect, connected & operating fine
- 05/2010-Johnson Controls: Vibration Analysis Preformed
- 05/31/10-06/02/10-Atlas: Explosion suppression system installed.
- 06/02/10- BS&B (Industrial Protection Devices): Annual inspection on the bag house explosion suppression system.
- 06/16/10-Serviced by Atlas.
  - Filter bags changes
  - Greased fan bearings and motors
  - o Calibrated pressure gauge
- 06/18/10-Repair rotary valve.
- 08/2010-Johnson Controls: Vibration Analysis Preformed
- 10/2010-Johnson Controls: Vibration Analysis Preformed

# <u>Baghouse</u>

Maintenance Summary for Jan 01, 2011-Dec. 31, 2011

## Tower A

- 02/09/11-IVI installed additional ventilation above the resol hopper
- 02/15/11-Johnson Controls: Vibration Analysis Preformed
- 06/14/11-PTI: Vibration Analysis Preformed
- 08/09/11-PTI: Vibration Analysis Preformed
- 09/26/11-Serviced by IVI North.
  - Filter bags changes
  - Replaced Cages
  - Die test preformed
  - Bags pre-coated(Hydrated Lime)
  - Greased fan bearings and motors-Atlas
  - Calibrated pressure gauge-Atlas
- 12/08/11-BS&B (Industrial Protection Devices): Annual inspection on the bag house explosion suppression system.
- 12/15/11-PTI: Vibration Analysis Preformed

- 02/09/11-IVI installed additional ventilation above the resol hopper
- 02/15/11-Johnson Controls: Vibration Analysis Preformed
- 06/14/11-PTI: Vibration Analysis Preformed
- 08/09/11-PTI: Vibration Analysis Preformed
- 09/25/11-Bruce: Rotary valve plugged up, unplugged and took 1 full bag of dust out.
- 09/26/11-Serviced by IVI North.
  - Filter bags changes
  - Repaired/Replaced Cages
  - Die test preformed
  - Bags pre-coated(Hydrated Lime)
  - o Greased fan bearings and motors-Atlas
  - Calibrated pressure gauge-Atlas
- 12/08/11-BS&B (Industrial Protection Devices): Annual inspection on the bag house explosion suppression system.
- 12/15/11-PTI: Vibration Analysis Preformed

#### Maintenance Summary for Jan. 1, 2012-June 30, 2012

#### Tower A:

- 01/01/12: Baghouse meter not reading. Work order was issued and problem found was the W/C lines had frozen. Lines were replaced.
- 02/15/12: Vibration Analysis Preformed
- 02/21/12: Air was temporarily turned off to the baghouse's because they were both purging at the same time. Later they were turned on individually and allowed to purge. When the compressors came back up the systems were operating as normal.
- 04/17/12: Baghouse W/C gauge was reading 0; lines were replaced and started operating as it should.
- 05/16/12: Vibration Analysis Preformed.

#### **Annual Maintenance:**

- 06/19/12-Serviced by Eagle Environmental.
  - o Filter bags changes
  - Die test preformed
  - Bags pre-coated(Hydrated Lime)
  - Greased fan bearings and motors-Atlas
  - Calibrated pressure gauge-Atlas

#### Tower B:

- 02/15/12: Vibration Analysis Preformed
- 02/21/12: Air was temporarily turned off to the baghouse's because they were both purging at the same time. Later they were turned on individually and allowed to purge. When the compressors came back up the systems were operating as normal.
- 05/16/12: Vibration Analysis Preformed.

#### **Annual Maintenance:**

- 06/19/12-Serviced by Eagle Environmental.
  - Filter bags changes
  - Die test preformed
  - Bags pre-coated(Hydrated Lime)
  - Greased fan bearings and motors-Atlas
  - Calibrated pressure gauge-Atlas

Maintenance Summary for July 01, 2012-Dec. 31, 2012

## **Tower A**

- 08/19/12: Installed the ducting from the dust collector to the Flexicon bag conditioner.
- 09/18/12: Vibration Analysis Preformed.
- 11/29/12-BS&B (Industrial Protection Devices): Annual inspection on the bag house explosion suppression system.

- 08/17/12: Installed the ducting from the dust collector to the Flexicon bag conditioner.
- 09/18/12: Vibration Analysis Preformed.
- 11/29/12-BS&B (Industrial Protection Devices): Annual inspection on the bag house explosion suppression system.

Maintenance Summary for Jan. 1, 2013-June 30, 2013

#### Tower A:

- 05/07/13-PTI: Vibration Analysis Preformed
- 06/30/13-Bruce: Replace (3) baghouse clamps on the purge tubes.

- 05/07/13-PTI: Vibration Analysis Preformed
- 05/30/13-Mike: Replace clamps on the purge tubes.

# Quarterly Maintenance Record - 2013

Panel Filters (Initial when complete)

Check the structural integrity of the panel filters

Inspect panel filters to determine need for and schedule filter changes

Baghouse (Initial when complete)

Check the condition of the system

Check the structural integrity of the baghouse

Check the baghouse pulse system

\* ANNUAL FILTER CHANGE 06-30-13/RB
1St Quarter 2nd Quarter 4th Quarter Comments:

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<u>Baghouse</u> Check the general cleanliness and operation of the baghouse and lube bearings.

	•	January	February	March	April	May	June	July	August	August September October November December	October	November	December
itial when complete	Week 1	98	40	88	98	8	88	88					
	Week 2	РВ	нα	мв	68	8	68	mB					
	Week 3	PB	¥0	RB	ВВ	88	98						
	Week 4	PB	ħζ	шB	98	8	<b>2</b>						
	Week 5			88	98		98						

Comments: